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ORIGINAL ARTICLES.

THE HORSE'S FOOT.

BY A. ZUNDEL.

(Continued from page 156)

CARTILAGINOUS QUITTOR—*Continued.*

VII.—*Symptoms.*—When the disease is recent and the quittor acute, and antiphlogistic treatment may be attempted and resolution looked for, baths and emollients are generally beneficial. A good blister has sometimes proved advantageous, and when it is used limited suppuration, with the formation of a simple slough, may take place.

If necrosis is well established, it is an indication of the necessity of a recourse to more energetic treatment, in which case several measures are recommended, including the actual and potential cautery and the removal of the cartilage.

In actual cauterization the necrosed spot is destroyed by a cautery brought to a white heat, applied directly upon it, after it has been exposed by a free incision. It is a simple treatment, and one that has been successful in cases of posterior necrosis where much fibrous tissue was diseased, and principally in young and well-conditioned animals (Lafosse, Sr., Girard, Vatel, Mangin, Renault). Still, this treatment not only often fails, but may even

become a means of irritation of the fibro-cartilage, and cause an extension of the necrosis. (Hurtrel, D'Arboval, Lafosse.) In our day this treatment is almost entirely ignored by good practitioners, and the potential cauterium more generally adopted.

This had already been employed by hippiatrics. Solleysel principally recommended the use of corrosive sublimate mixed with aloes; Girard, Barreyre and Bernard also mentioning it. English veterinarians recommend their use very strongly. (White, Blaine, Riding, etc.) These practitioners all used the solid caustic, either in the form of trochisc or in powder, and if they obtained good results it required a much longer time than that required in our day by the use of the liquid forms of caustic which are at our command. With the solid form the action was of limited extent, and scarcely more effective than that obtained by the actual cauterium; moreover, they frequently injured the healthy structures by irritating them and increasing the inflammation, and thus resulting in serious complications.

As we have said, liquid caustics are largely used to arrest the spread of the caries; they modify the process of decomposition, dry up the suppuration and stimulate the tissues without injuring the healthy structures. This mode of treatment must be credited to Mariage, who in 1847 established the unfailing efficacy of repeated injections of Villate's solution; one of sulphate of copper and sulphate of zinc, 64 grammes of each in 1 liter of vinegar, and decomposed by 125 grammes of Goulard's extract. It is really simply a solution in vinegar of acetate of copper and zinc, holding sulphate of lead in suspension. Villate himself had already used his solution with success by injecting it in cartilaginous quittor as early as 1829, since which time Burgniet, Verrier, Sr., Collignon and others have recognized the benefit of liquid escharotics in the treatment of the same disease. Villate's Solution is not a specific, and cartilaginous quittor has been cured by the injection of tincture of sublimate (10, p. 100), with solution of nitrate of silver (Bernard), with the perchloride of iron, chloride of copper, sulphate of copper and zinc, nitrate of lead, more or less concentrated mineral acids, and especially the rabel water (Collignon).

It is difficult to say which is the more useful of these drugs and which has been most successful. Success has also been obtained with injections of tincture of iodine, phenic acid and even petroleum. It is less the nature of the drug that insures the effect than the mode of using it. We ought also to say that, advantageous as this mode of treatment is, it is not infallible, though Mariage and others so consider it. It is not to be preferred to the extirpation of the cartilage, an operation which proves successful when all other means have failed.

To obtain a cure by the use of liquid applications it is essential to make injections every day, and even several times daily. These are made with a syringe, carefully adapted in respect to size, with a small canula. The injection must be pushed well in, but must be allowed to escape freely after coming in contact with all the diseased surfaces which it is designed to modify. To effect this it becomes necessary, as the fistulas are sometimes very narrow, and even irregular, to enlarge them, or to make counter openings. Mariage had originally insisted that these precautions were essential to the success of the treatment. H. Bouley and Visneur also strongly insisted upon the same point, viz., that of enlarging the fistula in order that the liquid should not be allowed to remain at the bottom of the fistulous tracts, by which all possibility of the extension of the disease from that cause might be avoided. These enlargements of the fistulas, or counter openings, close, however, very rapidly; as a remedy to which, Hivernat has suggested the introduction into the tracts of little wedges of wood pointed like pencils, for the purpose of lacerating the walls of the fistula, followed by the insertion in them of small setons moistened with Villate's solution. Guerrapain introduced a fine mèche of oakum, a seton in the tract, by means of a curved needle. If the fistula runs downward its bottom is under the wall, and he thins this down and makes a counter opening through the hoof thus thinned. This seton prevents the closing of the counter openings, and enables the operator to push through the injection regularly.

Other precautions are also necessary. One, especially, is rest. The animal must not be put to work. Lafosse says that these

liquid caustics act with regularity and cure with certainty. A bar shoe, not pressing on the diseased quarter, is also useful. Emollient poultices are sometimes necessary, after the injection, to diminish the irritation. Mariage also recommends them. If the fistula extends under the coronary band, or the podophyllous tissue, it becomes necessary to thin, or to remove altogether, the hoof of the diseased quarter.

After fifteen days of this treatment, the exfoliation often takes place, and recovery follows. Often, however, twice this length of time is necessary. After the first eight days the pus becomes more abundant, white, and laudable; the tumor softens and diminishes, as the pain subsides. Later, the injections penetrate with greater difficulty, which is a good sign. The injections constantly attack the germ of the disease and leave it without chance to re-form or to spread; the gangrenous structure which develops in the cartilage is changed into an inert substance; the pyogenic membrane of the fistulous tract is stimulated; the process of granulation becomes more rapid; the wound becomes more and more healthy, and the diseased process ceases. If, however, it continues, the wound changes its character; large granulations develop themselves, and on their center, the openings of the fistulous tracts, which open on the cartilage, make their appearance. At times the wound closes; but, after a short interval opens again, or another forms at another point. There is then a repetition of the same course of treatment by caustic applications,—but generally, this indicates a complication, and suggests the propriety of an operation. The injections are generally successful, however, and most certainly so if the caries occupies the posterior parts of the cartilage. They may even succeed in the anterior parts, when the animal is young and of good constitution. But if the cartilage has already become partly ossified, the caustic is irregular in its action, and the result becomes doubtful. If the caries is deep and extensive, and especially if the necrosis extends through and through to a point corresponding to the synovial capsule of the articulation of the last phalanx; or if the necrosis exists on the internal face of the cartilage, where it covers that structure, then the repeated injections of Villate's, or of any other

caustic, may be followed by serious complications. An old or complicated caries will offer an increased resistance to the treatment by liquid caustics, in proportion as there is more or less difficulty in bringing them in direct contact with the necrotic points.

The third method of treatment is that of the removal of the cartilage. This operation, first recommended by Lafosse, senior, in 1754, was often performed by his son, and may be considered one of the most valuable results of the application of anatomical knowledge to the practice of veterinary surgery. This operation was also performed by Bourgelat and his students, by Girard, Hurtrel Darboval, and was principally studied and described by Renault. In Germany, notwithstanding the writings of Langenbacher, Dieterichs, and Hertwig, it did not meet with approval, and English veterinaries seldom, if ever, resorted to it. At present, even in France, it is seldom performed, except in case of failure by the caustic injection treatment, and this is often the case where the disease is situated in the anterior part of the fibro-cartilage, where the cartilaginous tissue predominates, or where the vitality is diminished, and above all, where ossification has taken place. It is an operation of the greatest delicacy, and accompanied with great risks on account of the proximity of the joint of the foot, and it requires an experienced operator and thorough practitioner to justify a hope of successful results. It consists in the excision, by layers, of the diseased cartilage, and in avoiding injury to the coronary band and to the podophyllous tissue, which are essential elements of the organization of the foot. It is also essential to avoid injury of the lateral ligament of the foot joint, which is close to the cartilage, and above all, of the synovial capsule of the joint, which is directly covered by the cartilage. The partial or entire extirpation of the cartilage can be performed. In the first case, only a portion of the necrosed fibro-cartilage is removed. Vatel, Sanstas, Renault, Bell and Lafosse have reported many cases of recovery by this mode of operation; but, it is not likely to be thoroughly successful, unless in circumstances as favorable as those accompanying the treatment by liquid caustics. It is generally much better when

the operation is decided upon, to perform it by excising the entire structure, and removing all the carious elements. The partial removal is to-day entirely abandoned, and entire extirpation accepted as the true and only operative procedure. The best method of performing it is that recommended by Renault and adopted in our colleges. We shall make it the subject of description with all necessary details, and with various modifications as performed by other practitioners; we shall also offer some observations upon various other modes of performing the operation in question.

(To be continued.)

ACTINOMYKOSIS: A NEW INFECTIOUS DISEASE OF ANIMALS AND MANKIND.*

BY GEORGE FLEMING, F.R.C.V.S., ARMY VETERINARY INSPECTOR.

(Continued from p. 162.)

Prognosis.

The prognosis must depend not only upon the locality or anatomical seat of the disease, but also upon the extent to which it has developed itself. When an important organ is involved, and that extensively, or when the disease is but slightly advanced but is beyond reach; then the prognosis must be unfavorable. When it is accessible, and has not caused serious alteration, and when it can be removed or palliated within a certain time, then it must be pronounced favorable. Sometimes spontaneous recovery takes place, probably owing to the fungus losing its vitality, through diminished nutritive supply from retraction of the connective tissue stroma, and its becoming encapsuled in lime salts.

Treatment.

The treatment of actinomykosis belongs exclusively to the domain of surgery, and its object must be the extirpation or destruction of the microphyte. This is only possible when it is acces-

*From *The Veterinary Journal*.

sible to the hand, surgical instruments, or destructive agents—as caustics. Tumors situated on the jaws or face can be removed by cutting instruments, but it must be for the veterinary surgeon to determine as to whether operation will be profitable, from a pecuniary point of view. It must be remembered that resection of the jaws, which is generally a desirable and successful operation in man, is not to be recommended in the case of animals, for obvious utilitarian reasons. If it is decided that treatment be resorted to in the case of these and other easily-accessible actinomykomatous tumors, they should be removed according to surgical principles, and the wounds dressed with agents which will be likely to destroy any spores of the fungus which may chance to remain; or the attempt may be made to destroy the fungus by injecting these agents in a fluid state into the centre of the mass. Johnne speaks favorably of the action of sulphate of copper in destroying the fungus.

With regard to the actinomykosis of the tongue, success in treatment must depend upon the condition of the organ, *i.e.*, the extent to which it is invaded by the fungus. When this is near the surface it is easily destroyed by caustics, as carbolic acid (1 to 25 of water), tinct. ferri perchlorid., or liq. ferri perchlorid, fort., diluted with only two parts of water. The latter agent has been very successfully employed by Mr. James, who states with regard to it, "Only at the commencement of treatment is it necessary to dress every day; after a week, once in two or three days may be sufficient, but I leave that to the discretion of the practitioner, who will be guided by the appearance of the tongue and the progress the case is making; also to further dilute the dressing if necessary. . . . I always order some extra nutritive food, and I find after two or three dressings there will be a great improvement in the animal's feeding; the tongue will be hardened, and the abnormal sensitiveness destroyed."* A cure cannot be effected in a very short space of time, and patience is necessary to carry out the treatment effectively. When the organ is extensively involved, and treatment is nevertheless de-

* *The Veterinary Journal*, Vol. xiv., p. 12.

terminated upon, it is advisable to make more or less deep incisions in the indurated portions, and apply the caustic agent to these, so as to reach the deeper-seated fungus nodules. Excision of a portion of the tongue may even be advantageously resorted to, if the animal is to be fed on soft food, with the intention of its being consigned to the butcher.

When the actinomykomata are situated in the mouth or pharynx, they may be removed by the knife, écraseur, or even the fingers alone, the gag being employed to protect the hand and render the operation easier. Meyer, a veterinary surgeon at Neuhaus, in Germany, has, in the course of twelve years' practice, operated in more than 300 cases of pharyngeal tumors, or so-called lymphomata. He only employed his hand, passing it into the pharynx, seizing the growth, and removing it by twisting, tearing and scraping with the finger nail. I am informed that Mr. Wyer, M.R.C.V.S., of Domington, Lincolnshire (where such tumors are frequent), has also been very successful in this operation. He had the animal thrown down, inserted a mouth dilator between the jaws, which were maintained as wide apart as possible; then, with a short-bladed knife he made a vertical incision through the soft palate, to allow more room for the introduction of his hand into the pharynx, in order to tear away the tumors. The hæmorrhage was never serious, and the only danger was the tumefaction which ensued in a few instances.

In some cases, either before or after the operation, tracheotomy may be necessary to ensure success.

The Sanitary Importance of Actinomykosis.

The sanitary importance of this disease is so far evident. It is proved that the microphyte which induces it, or which constitutes it, can be successfully transplanted from a diseased to a healthy animal, and produce all the serious and characteristic lesion which mark the natural malady. If artificial, or rather experimental, transmission can be easily and successfully accomplished, there can scarcely be any reason to deny the possibility of accidental transmission; and though at present there is no direct evidence of this having taken place, either in man or beast, yet

this absence of proof may be owing to our ignorance of the nature of the disease, and consequent inability to trace or ascribe its origin to infection.

Now that we are acquainted with its pathology, and especially its etiology, and are in a position to be able to diagnose it in man and animals, we shall doubtless rapidly acquire new facts with regard to it. In the meantime, it is well to bear in mind the important fact—for which we are once more entirely indebted to experimental pathology—that the spores of this fungus, alike destructive to man and beast, may invade the body by a trifling scratch or wound, and there set up such changes as to ultimately cause death. Many such cases may have entered our hospitals and come under the observation of the surgeons, without their true nature being suspected. For, as I have already said, no instance—so far as I am aware—has been recorded as occurring in man in this country, Germany alone furnishing all the cases hitherto recorded; and yet there is only too much evidence to show that it widely prevails among our cattle (probably also among our other domesticated animals), and therefore those who go about such diseased creatures must be exposed to accidental transplantation of the *actinomyces*.

ADDENDUM.

Since the foregoing paper was written, M. Kaufmann, assistant teacher of physiology in the Lyons Veterinary School, has published some investigations he has made with regard to the infectiveness of the fungus, *aspergillus glaucus*, and as the results of his researches have an important bearing on the subject of micro-pathology, and especially on this of actinomykosis, I think it will not be amiss to refer to them here.

The microbes and bacterides, it is now fully established, are not the only microscopic agents capable of exercising a pernicious influence on the health of animals and mankind, as other vegetable organisms, and particularly the spores of certain "moulds," possess the same property; and it was to more fully establish this point that Kaufmann undertook his task. In the note which embodies his remarks and conclusions, and which is given in the

Archives Vétérinaires for November 25th, 1882 (p. 861), he reviews the state of the question up to the moment when he began his experiments; pointing out that in 1869 Grohe and Block produced fatal infection in rabbits, by injecting into their veins the spores of two of the commonest moulds, the *penicillium glaucum* and *aspergillus glaucus*. These results, however, were doubted by Cohnheim and Grawitz, who vainly attempted to reproduce them in 1874-75. But at a later period, in 1880, the last of these experimentors succeeded in producing infection with cultivated spores adapted to an alkaline medium.

These experiments which Kaufmann undertook, under the direction of Chauveau, had reference to the *aspergillus glaucus*, and the results he obtained proved that the spores of this cryptogam are infective without any previous adaptation. The following is the *résumé* he gives of one of his experiments, those which were afterwards instituted in modifying the circumstances, having corroborated the conclusions arrived at from this one:—

“On May 12th, 1880, on damp bread, I sowed the spores of *aspergillus glaucus* procured from the surface of a dried solution of gum arabic. This cultivation, placed in a water-bath kept at a temperature of 35° Cent., furnished numerous spores in about forty-eight hours. In order to obtain spores in abundance, I made a new cultivation on bread reduced to broth, with an acid reaction, using for this purpose the spore obtained by the preceding cultivation. This second crop, like the first, furnished spores in abundance in about forty-eight hours. I left these cultivations in the bath until May 19th, and on the evening of that day I put a quantity of spores of the second generation in water enough to make it look slightly turbid. Into the jugular vein of a rabbit (No. 1) I injected one centiliter of this fluid; and into another rabbit (No. 2) two centiliters. During the night of the 23d-24th, rabbit No. 1 died; while rabbit No. 2 was very ill, turning its head towards the side and foaming at the mouth; it died during the night of the 24th-25th. At the autopsy there were found in both rabbits the typical lesions of infection by moulds, such as Grawitz had described. The kidneys were highly congested in places, and on their surface were a multitude of white nodular

points. On section from the periphery towards the hilum it was noted that each white point on the surface was prolonged towards the medullary surface by a white line. Examined microscopically, in all these nodules the mycelium was found to be felted and already undergoing destruction. In rabbit No. 1 the mycelium tubes were yet perfectly recognisable; they were felted and partitioned, and in every respect similar to those figured by Grawitz. In rabbit No. 2, the one that lived a day longer, the mycelia had almost completely disappeared. Some fragments were noticeable which were easily broken up.

"In the liver there were also numerous white points, which contained fragments of mycelia in process of destruction. The lungs showed a small number of white nodules, but no mycelium tubes could be discovered in them, only granules which were doubtless the product of disintegration of the mycelia under the influence of the inflammation its presence provoked in the lung tissue. Similar white points to these were also found beneath the pericardium and in the walls of the stomach.

"In these two rabbits, the spores of *aspergillus glaucus*, cultivated on bread which had an acid reaction, produced a mortal infection exactly similar to that which Grohe and Block obtained, and also like that induced by Grawitz, with their malignant varieties previously adapted to the character of the blood by gradual cultivations.

"The spores which I injected into the rabbits did not undergo any process of adaptation to enable them to live in the blood; nevertheless, they germinated and vegetated in the organism. Previous adaptation is therefore needless in order to render the spores of *aspergillus glaucus* infective."

Kaufmann alludes to the experimental results published by Koch and his assistants, Loeffler and Gaffky, and which are analogous to those obtained by himself. These German investigators believed they had discovered the cause of Grawitz's non-success. Finally, he arrives at the following conclusions:—

1. The *aspergillus glaucus* grown on bread may produce fatal infection in the rabbit, even in an extremely small dose, 1.10th of a milligramme. Subsequently it was found that 0.05 milligramme of spores was sufficient to kill large rabbits.

2. That its previous adaptation to a liquid and alkaline medium, and to a temperature of 39° Cent., is not requisite to confer infectious properties.

3. That if this adaptation exercises any influence, it can only be accessory and very slight.

4. That the spores exposed to the temperature of the air during nearly six months preserve all their infective activity.

LITERATURE OF THE SUBJECT.

1868. RIVOLTA. Sarcoma fibroso al bordo inferiore della branca Mascellare Sinistra nel Bue. *Il Medico Veterinario*. Turin, 1868, p. 125.
1875. RIVOLTA. Del Così detto Farcino o Moccio dei Bovini e della Così detta Tuberculosis o Mal del Rospo (Trutta) della lingua dei Medesimi animali. *Giornale d'Anatomia. Fisiol. e Patolog. degli Animali*. Pisa, 1875, p. 198.
1875. PERRONCITO. Osteosarcoma della Mascella anteriore e posteriore nei Bovini, etc. *Enciclopedia Agraria Italiana* etc. Turin, 1875. Part 6, p. 569.
1877. BOLLINGER. Ueber eine neue Pilzkrankheit beim Rinde. *Centralblatt f. d. Medic. Wissenschaften*. Vienna, 1877. No. 27. *Deutsche Zeitschrift fur Thiermedizin*, Leipzig, 1877, p. 334.
1877. HARZ. Actinomycosis bovis, einer neuer Schimmel in den Geweben des Rindes. *Jahresbericht der Munchener Schule*, 1877-78.
1878. SIEDAMGROTZKY. Actinomykose. *Bericht uber d. Veterinarwesen im Konigr. Sachsen fur d. Jahr*, 1877. Dresden, 1878, p. 28.
1878. ISRAEL. Neue Beobachtungen auf dem Gebiete der Mykosen des Menschen. *Virchow's Archiv fur Path. Anat.* Berlin, 1878, p. 15.
1878. RIVOLTA. Sul Così detto mal del rospo del Trutta e sull' Actinomyces bovis di Harz. *La Clinica Veterinaria*. Milan, 1878.
1878. PERRONCITO. L'Actinomyces bovis (Harz) ed i Sarcomi nei bovini. *Annali della Reale Accad. d' Agricoltura*. Turin, 1878.
1879. JOHNE. Epulis vom Rinde mit Actinomyces Boum. *Bericht uber die Veterinarwesen im Konigr. Sachsen fur die Jahr*, 1878. Dresden, 1879, p. 26.
1879. PONFICK. Ueber eine eigenthumliche Form praeventebraler Phlegmon. *Berliner Klin. Wochenschrift*, Berlin, 1879. *Breslauer arztliche Zeitschrift*. Breslau, 1879.
1879. RIVOLTA. Sopra un nuovo micromicete del Cavallo. Piacenza, 1879, p. 145.
1879. PERRONCITO. Ueber den Actinomyces bovis und die Sarkome der Rinder. *Deutsche Zeitschrift fur Thiermedizin*. Leipzig, 1879, p. 33.
1880. JOHNE. Actinomykosis. *Bericht uber die Veterinarwesen im Konigr. Sachsen fur die Jahr*, 1879. Dresden, 1880.
1880. ISRAEL. Neue Beiträge zu den mikotischen Erkrankungen des Menschen. *Virchow's Archiv*, Berlin, 1880.
1880. PONFICK. Ueber Aktinomykose des Menschen. *Breslauer arztlich. Zeitschrift*. Breslau, 1880, pp. 141, 155.
1880. ROSENBAACH. Zur Kenntniss der Strahlenpilzkrankungen beim Menschen. *Centralblatt fur Chirurgie*, Leipzig, 1880. No. 15.
1880. RABE. Casuistische Beiträge zur Geschwulstlehre. *Wochenschrift fur Thierheilkunde und Viehzucht*, 1880. No. 4.

1880. PONFICK. Ueber Aktinomykose des Menschen. *Berliner Klin. Wochenschrift*. Berlin, 1880, p. 660.
1880. NOSOTTI. Sul Così detto mal del Forbice. *La Veterinaria*. Casalmaggiore, 1880, p. 342-453.
1881. PARTSCH. Zwei Fälle von Actinomycosis. *Breslauer ärztlich. Zeitschrift*. Breslau, 1881, p. 78.
1881. JOHNE. Die Actinomykose oder Strahlenpilzerkrankung, eine neue Infectionskrankheit. *Deutsche Zeitschrift für Thiermedizin*. Siebentes Band, Leipzig, 1881, p. 141.
1881. CSOKOR. Die Strahlenpilz-Erkrankung. Actinomykosis. *Allgemeine Wiener Mediz. Zeitung*. 26 Jahrgang. Wien, 1881. No. 43.
1882. PONFICK. Die Actinomykose der Menschen, eine neue Infectionskrankheit. Berlin, 1882.
1882. BIZZOZERO. L'Actinomicosi. Una nuova Malattia da parassiti Vegetali. *Gazetta degli Ospitali*. Milan, 1882.
1882. MICELLONE E RIVOLTA. Di una nuova specie di micromicete e di Sarcoma nel Cavallo. *Giornale d'Anat. Fisiol. e Patol. degli Animali*. Pisa, 1882.
1882. VACHETTA. Osteocondrosarcoma Macrocellulaire con Actinomiceti alla Mandibola inferiore d'Un Cane. *La Clinica Veterinaria*. Milan, 1882, p. 226.
1882. LINDQUIST. Aktinomykos, en infektionssjukdom hos nötboskap och Svinkreatur. *Tidskrift för Veterinar-Medicin och Huddjursskötsel*. Stockholm, 1882, p. 105.
1882. PUTZ. Actinomykose. Die Seuchen und Herdekrankheiten Unserer Haustiere. 1882, p. 592.
1882. PFLUG. Ueber Actinomykosis. *Berliner Klinischen Wochenschrift*, 1882. No. 3. *Oesterreichische Vierteljahresschrift für Wissenschaftliche Veterinar-kunde*, 1882. Band lviii., Heft 1. *Centralblatt für die Medicin. Wissenschaft*. No. 14, 1882.
1882. JOHNE. Actinomykose der Zunge. *Bericht über d. Veterinarwesen im Königr. Sachsen pro 1881*.

(To be continued.)

RHEUMATISM AND ACUTE INTESTINAL INDIGESTION.

By C. C. McLEAN, V.S.

On the morning of May 10th I was called to see a brown gelding used in a livery stable, which, on a previous day, had been driven in a cold rain. On arrival I found him in great distress. Temperature, $105\frac{2}{10}$; pulse, 87; respiration much worse than a horse would have in a *very bad* case of laminitis; he was almost unable to move; joints swollen; hot, and exceedingly painful; cracking noise on movement; bowels costive, and urine scanty and high colored.

Diagnosis.—Acute Rheumatism. *Treatment.*—Purgative.

Tr. Acon Rad. in. xx., every four hours. Salicylic Ac. ʒij., every three hours. Potassa Nit., freely in drinking water, and hot applications externally.

May 11th.—Some improvement; temperature, $103\frac{1}{2}^{\circ}$; pulse, 72, and some inclination to eat; bowels had not moved; urine high colored, but increased in quantity; but when tested by heat and nitric ac., I found enormous precipitate of albumen. At 9 P.M., of same day, was called in haste to see him again, as owner said he was bloated and dying. I found him in great pain, sweating, rolling and tumbling, and very tympanitic, and saw that I had a bad case of acute intestinal indigestion to deal with, and gave a drench, composed of eth. nitrosi, chl. hyd., sp. ammonia Aromaticus, but gave no relief, and repeated in half hour, and added sp. terebinth, and gave relief. And as there had been no action from purgative given the morning of the 10th, I gave a purge in solution. He became so tympanitic again that I had to resort to trocar and canula twice before he got permanent relief. During this attack of indigestion the stiffness and soreness of rheumatism had entirely disappeared, but as soon as permanent relief was given, and he became cool, the former symptoms returned; during the time he was so tympanitic, there was *terrible* dyspnœa, as he was badly affected with broken wind.

May 12th.—Bowels move freely; less cracking of joints on movement, and swellings have shifted some, but are not so painful. Temperature, 101° ; pulse, 60; urine improved in color, and less albumen when tested.

May 13th.—Temperature, $98\frac{1}{2}^{\circ}$; pulse, 43; bowels in good condition; no albuminous precipitate in urine; he is able to move without showing pain; extremities cool, and swelling disappears.

May 14th.—Pulse and temperature about normal; appetite good; bowels and urine normal; case discharged. This case is rather interesting to me on account of seriousness, and be ause he would have succumbed beyond a doubt without the aid of trocar and canula. I have since discovered that the cause of the indigestion was a change in food from oats to chop. I think many such cases are lost by not being punctured in time. Some prac-

tioners do not resort to puncturing until the vital powers are so exhausted that recovery is nearly impossible. I do not believe in indiscriminate puncturing, but advocate puncturing as soon as antacids, stimulants, antispasmodics, etc., have had a fair trial.

SUPPURATIVE PAROTIDITIS.

BY THE SAME.

The subject of this rather uncommon affection was a Jersey bull calf, aged three months. His dam is the celebrated Jersey cow Eurotas. Said calf cost his present owners, Messrs. Miller and Sibley, the enormous sum of \$12,500. When I was called to see him, found considerable febrile disturbance, complete anorexia, painful swelling of right parotid.

Diagnosis.—Parotiditis.

Treatment.—Saline laxatives and hot water applications to parotid region, followed by cataplasma lini. Continued poultice for several days, and gave small doses of febrifuge medicine. Swelling begins to disappear, calf eats and appears to be doing nicely. Calf is exposed to cold through negligence of attendant; gland swells very badly—about three times former swelling. Poultice is again applied and laxative given, and soft food. Swelling begins to point, and as soon as pus approaches surface is lanced, and about two ounces of laudable pus escapes. Treat opening with carbolic wash. There is very slight discharge of saliva through opening, but it ceases in 48 hours. Opening closes, and slight induration remains, which subsides on application of tinct. iod.

AN INTERESTING POST MORTEM.

BY V. L. JAMES, V.S.

The history of the mare from which those tumors I sent you the other day were taken, is as follows: Four years ago she had a tumor form on the end of her tail, which ulcerated and became

very offensive, and the owner supposing it to be a wart, had the tail amputated. Afterwards other tumors formed along the under surface of the tail, and one in the muscle on each side of the anus which, at the time of her death, had the appearance externally of melanotic tumors. She has been used on a farm and kept in good condition and done her share of the work up to June 5th, all the owner noticing amiss being a cough and slightly labored breathing, he supposing her to be coming down with broken wind. On the 5th he drove her a short distance, single, when she appeared dull and wanted to stop often. On arriving home she was put in the barn and fed as usual, and on going there a short time afterward she was found down, resting her nose on the floor and in great distress. A neighbor chancing to be going by who doctors horses occasionally, he was called in and prescribed something to quiet her pain, and the next day (Wednesday, 6th), I was sent for to see her. On my arrival I found her standing. She had not been down since the night previous. Eyes amaurotic; breathing labored; pulse 90; temp. 105° ; no murmur over lower half of lungs, and dull sound on percussion; heart sounds as though beating through water; had eaten nothing since first taken. On the 7th I visited her again, found pulse 80; temp. 104° ; on the 9th, being in the neighborhood, I called again, found pulse 54; temp. $102\frac{1}{2}^{\circ}$; seemed brighter; began to eat some; had slight dropsical swelling on under surface of abdomen and chest; this was about noon; in the evening they went to the barn about nine o'clock and found her down, and at ten o'clock same evening she died. Next morning I held *post mortem*, found the abdominal cavity filled with bloody serum. On removal of spleen, found it to be divided into five large tumors, round one way and oval the other. Noticing that they were about of a size I weighed one, which weighed seven pounds; there were a few small ones, one of which I sent you; that was the largest of the small ones. The whole spleen weighed 38 pounds. There was a rent across one of the large ones extending in to its center, and its surface was covered with coagulated blood. The right lobe of the liver was filled with these tumors, and the whole gland weighed $24\frac{1}{2}$ pounds. The ovaries were both affected, and a

few very small white tumors scattered about on the peritoneum. On opening the chest found it and also the heart sac partly filled with bloody serum. The lower half of the lungs were entirely composed of tumors and cysts, one of which I also sent you (that was a medium sized one, some being three or four times as large, others smaller). Some of these were filled with straw-colored serum and jelly-like substance of same color; others with bloody serum and sac lined with coagulated blood. Some were solid, but easily broken down and of brownish color, the whole mass weighing 56 pounds. There were also in this cavity small tumors on pleura costalis and diaphragm. All of the tumors situated on a serous membrane were white internally and externally and solid.

There was a small quantity of pus in pelvis of right kidney. The tumors on under surface of the tail before death (or some of them) felt as though filled with pus, but on opening one of them but a small quantity would exude. As I wrote you on my postal card, the mare was a dark bay, with black points; thirteen years old and about 15 hands high. Having a long distance to go to see another patient, I did not stop to examine any other parts.

[The tumors are now under preparation for microscopical examination—their nature will be made known as soon as we have received it.—EDIT.]

UNUSUALLY HIGH TEMPERATURE IN A CASE OF PNEUMONIA.

BY WM. R. HOWE, V.S.

Pneumonia, or inflammation of the lungs, is a febrile condition from which no animal is exempt. Although any disease affecting such important organs as the lungs is dangerous, I do not think it is often necessarily fatal, if attended to with proper care and treatment.

Williams says that in pneumonia the temperature may rise to 103°, 105°, or even to 106°. In my own experience, until the present case, the greatest rise of temperature in the disease has been to 105½°, 106° being the highest record that I can find in simple pneumonia. I thought this case might be of interest to the readers of the REVIEW.

On May 9th, at about 6 p. m., I was called to see a gray gelding five years old. Found pulse 71, respiration 24, temperature $106\frac{1}{2}^{\circ}$. Limbs and ears cold, bowels had just moved and were about normal.

On auscultation I could hear but slight tubular breathing in left lung, the right lung being natural. The horse was in very little pain. Diagnosis: Pneumonia.

May 10th,	8 A. M.,	Pulse 68,	Resp. 22,	Temp. $106\frac{7}{8}^{\circ}$
" "	7 P. M.,	" 68,	" 22,	" $106\frac{3}{8}^{\circ}$
" 11th,	8 A. M.,	" 68,	" 22,	" 106°
" "	7 P. M.,	" 68,	" 22,	" 106°
" 12th,	8 A. M.,	" 65,	" 21,	" $105\frac{1}{2}^{\circ}$
" "	7 P. M.,	" 65,	" 21,	" $105\frac{1}{2}^{\circ}$
" 13th,	8 A. M.,	" 63,	" 21,	" $105\frac{3}{8}^{\circ}$
" "	7 P. M.,	" 63,	" 21,	" $105\frac{3}{8}^{\circ}$
" 14th,	8 A. M.,	" 63,	" 21,	" 105°
" "	7 P. M.,	" 63,	" 21,	" $105\frac{7}{8}^{\circ}$
" 15th,	8 A. M.,	" 68,	" 21,	" $105\frac{3}{4}^{\circ}$

On auscultation could now hear loud crepitation with slight gurgling sound in all but lower part of left lung.

May 16th,	8 A. M.,	Pulse 65,	Resp. 22,	Temp. $105\frac{1}{4}^{\circ}$
" "	7 P. M.,	" 65,	" 22,	" $105\frac{1}{4}^{\circ}$
" 18th,	8 A. M.,	" 57,	" 20,	" $103\frac{3}{4}^{\circ}$

From this date I only saw the horse once a day. He continued to improve slowly, temperature falling gradually to $101\frac{1}{2}^{\circ}$ on May 22d.

The extremities were not cold after the first day; bowels and kidneys, although slightly dormant, never were badly deranged.

The horse never lost his appetite completely; ate a little grass and bran mash at every meal.

Treatment consisted of the administration of quina sulph. 3 ij. in alcohol every 6 hours, and potassa nitrate in drinking water. Kept up the quinia every 6 hours until the temperature began to fall, then only gave it twice a day in same dose, continuing alcohol 4 times a day.

I have been induced to write up this case, not on account of the treatment, or because of the final success, but on account of the extreme high temperature with moderation of other symptoms, and the persistency of high temperature in spite of treatment which certainly had a strong tendency to lower it.

EDITORIAL.

VETERINARY CONVENTIONS.

In our last issue we called the attention of the profession to a movement which had been inaugurated in the west, which we thought would have the effect, if followed up throughout the country, of greatly promoting the advancement of veterinary science in the United States. The movement referred to was the holding of the Veterinary Convention at Chicago, the formation of a State Veterinary Association, and the proposal to hold similar meetings in Wisconsin, Iowa, Michigan, Ohio, and probably in other western States.

This movement ought, in our opinion, to be imitated by the eastern States, and we have been gratified by the receipt of a number of letters which seem to indicate that during the next few months similar conventions may be expected in nearly every State of the Union.

We do not ignore the fact that certain difficulties must be encountered in conducting these conventions efficiently and harmoniously, but if Illinois has encountered no insuperable obstacles in the experiment, we see no reason why failure should be apprehended in other places. There are, doubtless, organized societies in other States upon which it would seem to be incumbent to take the initiative step in calling these conventions.

The successful accomplishment of the suggestion in question would unite the members of the veterinary profession into a strong and influential body, which would occupy a place in public estimation which, in their present divided and obscure position, they can never hope to maintain,

The REVIEW will be glad to give publicity to the views of any writers who may see fit to communicate their thoughts upon this subject through our columns.

CONTAGIOUS DISEASES AMONGST OUR DOMESTIC ANIMALS.

Recent outbreaks of contagious pleuro-pneumonia in various parts of some of the eastern States, principally in New York, with the official acknowledgment of ignorance of power to dispose of diseased or dead animals, or of legislative regulations, by the Sanitary Veterinary Inspector, are conditions which veterinarians will seriously regret, and which we hope will make evident to the public the great error committed by our State authorities when the work carried on by Gen. Patrick's commission was cut short some years ago.

With pleuro-pneumonia constantly threatening our extensive cattle population in the west, with anthrax devastating more or less every year some of our cattle ranges, with hog-cholera killing our swine, with glanders and farcy breaking out at various times, is it surprising that foreign countries should find our preventive laws defective and the sanitary condition of our cattle not such as to afford reasonable security against foot and mouth disease, even when the true extent of its existence in the United States—if it exists—is so little defined that it can be denied.

In view of the existence of such restraining measures as have been taken by foreign countries, and the possibility of others which would interfere still more with our exports of animals, it is evident that the best remedy is the increase of power at the hands of the Treasury Cattle Commission, the appointment of State Veterinarians all over the country, and the formation of a Veterinary Sanitary Bureau; all of which will not only look after the sanitary condition of our domestic animals, but also prevent by proper legislation the unreasonable opposition that may be met with in the performance of professional duties, as has recently been the case in some instances, where animals affected with contagious diseases were not allowed to be destroyed, notwithstanding the existence of the disease was fully established, without the interference of legal official authorities.

GLANDERS IN ILLINOIS.

We have received from Dr. Paaren, State Veterinarian, the reports of the proceedings of the Illinois State Board of Health, which contain the history of the outbreak of glanders with which he had to deal, not without difficulty, in June last; and also the various acts amending that already existing, together with the official opinion of the Attorney General as to the powers and duties of the State Veterinarian. We regret that these important documents did not reach us in time to allow an earlier publication, but they will be presented to our readers in our next issue.

PATHOLOGICAL PHYSIOLOGY.

UPON THE ATTENUATION OF THE BACTERIDIE OF ANTHRAX
AND OF ITS GERMS UNDER THE INFLUENCE OF ANTISEPTIC
SUBSTANCES.

BY M. CHAMBERLAND & ROUX.

We have established the fact—in a note presented to the Academy—that the bacteridie of anthrax is modified in its virulency when placed in a medium containing an antiseptic substance, and especially phenic acid, or bichromate of potash. We have shown that the threads of bacteridie which have been submitted to the action of these agents reproduce themselves when in proper mixtures, with its diminished virulency, and that it gives their germs, which also perpetuate its new qualities.

In another series of experiments, we have submitted the bacteridie thread to the action of the chemical agent in a liquid where its reproduction was not possible; we have brought the fully formed bacteridie under the action of an antiseptic solution in pure water, from which it could not derive any nutritive element.

The bacteridie threads of a drop of virulent anthrax blood, placed in phenic water of 1-600, soon die. We have seen, however, that the bacteridie lives and grows for months in a nutritive bouillon containing as much as 1-600 of phenic acid. In a phenic

solution of 1-900 the bacteridie threads remain alive for quite a long time, as proved by the cultures which can be made of them, even after the expiration of several months. During the entire duration of the experiment they give no germs, and the virulency continues to diminish. For instance, the culture of thready bacteridies, which have remained for a month in contact with a phenic solution of 1-900, kills rabbits and guinea pigs. A culture of three months does not kill rabbits. In these cases the loss of the virulency is less rapid than in the case where the bacteridies are in presence of the antiseptic. It is only a short time before the death of the filaments that this diminution of virulency for the rabbits can be observed.

The condition essential to reduce the virulency of the bacteridie of anthrax, either by the method of cultures at 42—43°, or by that which uses the antiseptics, is the absence of spores in the threads submitted to the continued action of air, of heat, or of various other chemical agents. The spore is the form of resistance of the bacteridie; it, so to speak, removes it from the action of the surrounding medium, and preserves the properties of the thread from which it comes. Notwithstanding this resistance to the external agents, the germ of bacteridie can be modified and reduced in its virulency, as the thread itself.

Well-formed spores of bacteridie, about fifteen days old, are exposed to the contact of sulphuric acid at two per cent., and to the temperature of 35° in closed tubes, being frequently shaken to be sure of the contact of air with the spores. Every second day a small quantity of these spores are placed in a bouillon of veal, slightly alkaline. The cultures thus obtained, in the first days, kill rabbits and guinea pigs. The culture of the eighth or tenth day kills the guinea pigs, but remains harmless to the rabbits; that of the fourteenth day remains active only in a few of the pigs inoculated. The bacteridies thus obtained produce numerous germs rapidly, and preserve their reduced virulency in the successive cultures.

But it is remarkable that the cultures formed from the spores treated by sulphuric acid, and which have lost some of their virulency for rabbits, has preserved it for sheep, and kills them in

the proportion of seven out of ten. This fact, with others that we have already published, show that each species of animal has a receptivity of its own for each breed of bacteridies, which can be created by artificial cultures.

The diminution of the virulency of the spores of bacteridie, and their death under the action of diluted sulphuric acid, take place so much more rapidly when the temperature is higher and the acid more concentrated, and so much slower when the temperature is low and the acid solution more diluted—*Academie des Sciences*.

REPORTS OF CASES.

(From the Hospital Department of the American Veterinary College.)

RAPID AMPUTATION OF AN EXTRA SCROTAL CHAMPIGNON BY MEANS OF THE ELASTIC LIGATURE.

By W. D. CRITCHERSON, D.V.S., House Surgeon.

The subject upon which this operation was performed was a dark brown gelding, seven years of age, and used for driving purposes. According to the history he has had a sore on his scrotum which had been discharging for the past three months.

At the time of admission to the hospital the animal was in the following condition: External appearance very good; body rather fleshy; in good spirits; in fact all the functions seem to be normal. There is neither lameness or stiffness shown in action.

The scrotal region is considerably swollen, hard, painless on manipulation, and the seat of several fistulous openings, varying in depth, which run into the enlargement.

Upon the center of the left side there is an extra scrotal tumor, having a circumference of about thirteen inches, and a base attached by a peduncle to the scrotum, which is about six inches in diameter. This abnormal growth is round, smooth, and bleeding here and there.

After having been prepared, and a dose of chloral administered at two o'clock P.M. on the 3d of July, he was cast and secured.

When placed upon his back a more thorough and careful examination of the part was made. It was then found that not only the left but the right testicular sac was extensively diseased. The right has four large fistulas running into the mass of the enlargement.

The left has also several, but one principal one situated in front of the mass protruding from the scrotum. Rectal examination had also demonstrated that the blood vessels of the right cord were large and abnormally distended. In the face of such conditions the dangers of the operation were considered of such a nature, and the prospects of a radical recovery so slight, that it was decided not to perform the operation generally indicated in cases of champignon, but merely to remove the external tumor.

Not thoroughly surgical as this decision may be at first thought, it was undoubtedly the safest method by which to place the animal in condition to perform his work, which was all the owner desired, and which the animal had been able to do up to the day he was brought to the hospital for treatment. But the size of the tumor was such that it began to attract attention, and the stench which was emitted made it anything but a pleasure to drive him.

A strong elastic ligature was applied around the base of the external tumor, making only three turns of the ligature, well stretched, so as to enable it to cut its way more readily through the tissues.

The animal made only slight and short struggles during the operation, and upon the removal of the hobbles he sprang lightly upon his feet, showing not the least effect from the action of the chloral. During the afternoon he manifested slight colicky pains. Villate's solution was injected into the various fistulæ.

The next day, July 4th, the tumor is of a dark purple color, cold to the touch and of an offensive odor; pulse and temperature about normal. There is slight anorexia. On the morning of the 5th, about 40 hours after the operation, it is found that the tumor has been removed, and that the ligature remains attached by a small thread of modified tissue to the centre of the wound. The wound was now dressed with iodoform and charcoal powder.

In about 36 hours the elastic sloughed away, and after the opening of two small abscesses which had formed, one on each side of the scrotum, the animal was allowed to return home, in a fair way to resume his work in a short time.

It is to be feared, however, that there is but a temporary relief afforded, and that the protruding growth will sooner or later make its appearance anew, as it is doubtful that the granulations can be kept under control.

COMMUNITIVE FRACTURE OF RADIUS.

On Sunday evening, May 27th, about 5 P. M., I was called to see an animal which I was told had received a kick on being backed out from his stall, by the horse next to him.

On entering the stable I noticed a large bay gelding standing in the centre of the floor, his near fore leg slightly advanced and raised from the floor, with the lower portion of the limb hanging pendulous.

There was a slight amount of swelling. Upon examination I found that there was an oblique fracture of the radius and ulna. The injury had been received on the inside of the limb at about the lower third of the radius. There was a slight abrasion at the point indicated.

On manipulation distinct crepitation could be both heard and felt.

A fragment of the fractured radius on the internal border was protruding about one-half inch from the body of the bone, threatening to cut its way through the skin covering the parts. As the horse was a valuable one and the owner at the time in Europe, I sent for Dr. L., that he might see the case. On his arrival, after completing his examination, he applied temporary splints and a bandage extending from the foot up to the elbow, in order to control the swelling, which was rapidly increasing, and ordered the animal to be put in slings and the person in charge notified, which was done, and in the morning came the order to destroy him. The following are the lesions which were found upon post mortem examination :

At the lower third on the internal border and posterior face of the radius, there was crushing of the bone and loss of substance, indicating the point at which the blow had been received. It seemed to indicate that the toe calk of the shoe alone had touched the limb, and all the force of the blow was concentrated at that point. From this point extending upward and outward, the ulna included, there was a complete, oblique and comminutive fracture of the entire body of the bone.

About the middle of anterior face of radius, below the fracture, started a fissure which extended to the beginning of the median groove of the inferior extremity of the bone, through which the anterior extensor of the metacarpus passes. From this point it extended squarely across to the internal border, then obliquely upward along the posterior face of the bone to the lowest point of the fracture, forming an irregular quadrilateral section, which was itself divided into two pieces for nearly its entire length. The upper edges were worn perfectly smooth, being kept in contact with the bone above by the contraction of the muscles. The posterior face of the inferior fragment of the bone presented two fissures, one starting from the limit of the fracture and external border of radius, the other from the internal border, and both terminating at the tubercles on posterior face of radius.

EXTRACTS FROM FOREIGN JOURNALS.

DENTAL CYST ON THE RIGHT TEMPORAL REGION IN A FOUR-YEAR-OLD MARE.

By MR. CH. MOROT.

A four-year-old mare had a suppurating fistula on the right temporal region, near the base of the ear. From the time she was two months old she had a purulent discharge at the bottom of the right concha. A counter opening had been made to allow the wound of the ear to close up, but it remained open, discharging through the fistulous opening. A year after, another veterinarian injected Villate's solution without better results. The animal, when visited, had on the right temporal region a fistulous opening, from which oozed a white-yellowish fluid, thick and

offensive. A probe pushed in the tract reached down about an inch, and was stopped by a hard, rough, immovable body. There seemed to be no inflammatory condition in the part. The right temple was larger than the left.

A diagnosis of dental cyst was made with a doubtful prognosis. Operated with difficulty, the tumor, which proved to be a molar, imperfectly and irregularly developed, was removed, after being dislocated from its surroundings. The extraction was accompanied by that of two plates of bony pieces, probably portions of the external layer of the squamous portion of the temporal bones. The wound was dressed with carbolized balls of oakum for five days, and on the sixth day an unsuccessful attempt was made to remove what seemed to be another molar protruding in the bottom of the cavity left by the first tooth. For a few days following the animal seemed to be doing well, but twenty-one days from the first operation she seemed to have some difficulty in eating. She has had paralysis of the muscles of the right side of the face. This was soon complicated by an extension of the nervous trouble, which manifested itself by a complete hemiplegia of the right side. This condition assumed a fatal aspect a few days after, in symptoms of total hemiplegia of the left side, and the animal was destroyed.

At the post-mortem examination of the head, it was found that the fistula extended down to the superior extremity of the molar left at the bottom of the wound. A section of the head showed a convex projection towards the cavity of the brain, pressing upon the meninges and the corresponding brain substance, where a depression was found. This projection was formed by an abnormal molar, imbedded between the two layers of the squamous temporal bone. The number of molars in the mouth was normal—twelve in each jaw.—*Recueil de Medecine Veterinaire*.

TUMOR OF THE BRAIN IN A STALLION.

By M. CHUCHU.

A stallion, six years old, was found one evening in his stall, with symptoms of vertigo, which subsided, to reappear after one

day of work, when he again presented the same symptoms. No treatment was attempted, beyond taking precautions to prevent his hurting himself against the wall and sides of his stall. A few days later, a sudden change occurred; he stopped pushing against the wall, but showed the most marked symptoms of immobility. By a long rest of three weeks he seemed to improve sufficiently to be able to resume light work, but the day following the symptoms reappeared, followed by those of immobility. This condition continued until the animal was destroyed. At the post-mortem, two tumors of the choroid plexuses were found, of the size of a flattened walnut, one in each ventricle. There seemed to be no atrophy of the optic layers, or of the corpora striata, only a small quantity of fluid of a citrine color. These tumors were formed of crystals of cholesterine, with an abundant proliferation of the cellular and vascular elements.—*Ibid.*

DYSTOKIA—CALF WITH TWO HEADS.

BY M. MARLOT, JR.

This is the case of a primipara cow which had for several hours violent pains without being able to deliver. On examination, it was found that the fœtus seemed to be dead, and has his two hind legs protruding outwards. These being secured with ropes, strong traction was made upon them, but the delivery was still prevented. Embryotomy was performed, all the internal viscera removed, and the transversal section of the body was made. An attempt to change the position of the fœtus gave to the hand the feeling of one head, and on the opposite side of a pair of ears belonging to a second. The remains of the trunk being secured with ropes, and stronger tractions put upon them, the two heads, which are connected in T form at the extremity of the neck—which is represented by the long branch of the T—approached closer to each other, and resumed their horizontal position, when the mass was extracted from the vaginal canal. Both are perfectly formed, of equal size, the same color, and perfectly alike. There was but one vertebral column, and only one spinal marrow,

bifurcated at the level of the third cervical vertebræ. Each head has its own atlas and axis, each axis being articulated with the third cervical vertebræ. There were two œsophaguses united into one single canal at the entrance of the chest, and also two tracheas, not united. The nerves, the jugular, and the carotids were also double. The cow, though very sick after her delivery, made a rapid recovery.—*Ibid.*

A TRANSVERSAL PRESENTATION.

By M. BAULET-JOSSE.

A mare presented all the symptoms of a difficult labor. By exploration, while standing up, the author observed that the neck was widely dilated, and the hand pushed into the matrix feels the back of a fœtus, which seems very large. Another exploration in the decubital position reveals the same condition. Failing to change the presentation and to take hold of any part of the fœtus to change its position, the mare was destroyed. At the post mortem, made the next day, it was found that the fore-legs, the head and the neck were engaged in the right half of the uterus, and the hind legs in the left. The long axis of the fœtus was perpendicular to that of the mare.

The conclusions of the author are that :

First. Presentations by the back alone, with the legs forward, are seldom seen, but are incurable.

Second. Presentations by the four legs are quite frequent, but generally followed by recovery.—*Ibid.*

A CASE OF OSSIFICATION OF THE TRACHEA FOLLOWING TRACHEOTOMY.

By M. BENJAMIN.

The animal that died from this lesion was a Percheron stallion, six years old. Affected with an acute laryngitis, he had been tracheotomized. Relieved by the operation, he made a good recovery, the tube remaining in the trachea but a few days.

When he resumed his work, he roared considerably. Some time later, the author saw him and observed that the region where the operation had been performed was considerably swollen. The swelling resisting the application of several blisters to a great extent, the animal was returned to his work and with this the roaring returned and increased. Allowed to rest, and severe counter irritation being applied to the swelling, he first seemed to improve, but a few days later, he was taken suddenly with a choking spell, and though an attempt was made to relieve him by tracheotomy, he died in a few minutes. At the post mortem, the trachea was considerably reduced at the point where the tumor existed, and its anterior face was transformed into a large, hard, partly ossified mass. At the posterior face of this was an abscess containing about two deciliters of white, creamy pus. The mucous surface of the trachea presented five or six polypous growths. That of the pharynx and of the larynx were normal.—*Ibid.*

A COLT WITH THREE LEGS.

By M. CAGNY.

The author reports the following curious case of simple thoracic ectromelia: A colt was born with three legs, the right anterior one being almost entirely missing. The shoulder was well formed, but below the scapulo-humeral joint there was a bony stump resting alongside the ribs, which seems to take the place of the superior half of the body of the humerus. The skin is perfectly intact, but at the point where the humerus terminates, a line exists which can be compared to a cicatrix, covered with hairs running crosswise and straight. The colt was strong and vigorous, thirty-three days old. He stands up part of the day, walks in a jumping fashion, and canters as fast as a colt of his age. He jumps small pools of water. When he is in action or at rest, the right shoulder executes the motion which would carry the missing leg forward. The left leg is very strong, and does not seem to suffer from the greater amount of weight it has to carry.—*Ibid.*

SOCIETY MEETINGS.

MANITOBA VETERINARY ASSOCIATION.

The regular general meeting of the Manitoba Veterinary Association was held at the Grand Union Hotel, on Friday, June 28th. The members present were, C. Taylor, W. A. Dunbar, C. Little, J. Loughmen, D. McFadden, Wm. McEachran, M.D., F. W. Lipsett, D. Scoulaw, M. Young, F. Torrence and W. J. Hinman. The minutes of the previous meetings were read and passed. After general business, the following officers were elected for the ensuing year, viz: Charles Little, President; D. McFadden, Vice-President; W. J. Hinman, Secretary Treasurer—with Messrs. McEachran and Loughman members of the Council. A discussion then followed in reference to the bill as passed by the Local Legislature, when the following resolution was drafted by a committee consisting of Messrs. McEachran, Torrence and Young:

Resolved, That this Association, considering the benefits it has conferred on the Province and the assistance it has rendered to the Department of Agriculture since its incorporation, regrets the recent action of the Local Government in limiting the usefulness of the Association by repealing some of the most important clauses in the act respecting veterinary surgeons, and that while the Association commends the act as it respects the suppression of contagious diseases of animals, it cannot but express its disapproval of the action taken, more especially as the Association was not allowed an opportunity of being heard on a matter which concerned its being.

This resolution being unanimously carried, the Secretary was instructed to send the same to the press for publication.

F. W. Lipsett, the retiring President, was then elected Honorary President of the Association. An adjournment was had until evening, when some very interesting and instructive papers were read pertaining to the veterinary act. Mr. Hinman informed the Association that he had resigned the Government Inspectionship for the Province. The meeting adjourned until October 1st, to be held in Portage la Prairie.

The necessity for the inspection of the abattoirs and meat

was the subject of an able and interesting essay, delivered by Dr. McEachran, who said:

"The importance of this subject in a young country like Manitoba determined me to bring it to your notice, and through you to the people at large. The practice of killing cattle in all parts of a thickly-settled community is, I think you will all agree with me, from a sanitary point of view a most pernicious one. They are often situated in the most unhealthy and over-crowded localities and kept in the filthiest condition, and they, especially in hot weather, pollute the atmosphere with most unsavory odors. As a rule, they are not only utterly unsuitable for the purpose to which they are devoted, but are often places where every kind of fraud is perpetrated with regard to diseased or objectionable flesh, and where the most horrible cruelty may be inflicted on the creatures driven there for slaughter.

"In making these remarks I speak of what has been abundantly proven in the cities of the east and of Europe. So far as Winnipeg is concerned I cannot speak. These facts have led the authorities in the majority of cities in Europe and the eastern States, and I am glad to say, in one city at least of the Dominion (Montreal), to institute public abattoirs in suitable localities, where not only would the sanitary condition of the neighborhood be uninfluenced, but a guarantee would be afforded that the animals were in a healthy state and not subjected to ill-treatment before being killed.

"Thus far I am pleased to state that the corporation of the city of Winnipeg have lately advanced and are now building proper buildings for the establishment of a public abattoir, and I hope to hear of the establishment of similar institutions in all fast growing centres of population in Manitoba and the northwest.

"But I think a step further is absolutely necessary in the interests of the public, and in this we are or should be all interested. I refer to the inspection of cattle by a competent veterinarian, and I think it is the duty of this Association to urge upon the corporation the appointment of some competent veterinary surgeon who shall act as inspector in the abattoir, and who from his knowledge can certify to the condition of the animals both

before and after slaughter, and see that they suffer no neglect or cruelty at the hands of the butchers. It will be profitable, I think, to consider for a few moments causes which give rise to the necessity for inspection of meat. The inspection of flesh after the carcass has been cut up is not always satisfactory, for various reasons, among which may be mentioned the fact that an animal may have died suddenly or a natural death, and while suffering from some disease, and the blood having been drawn from her and the organ or organs affected removed, thereby rendering the detection of the diseased condition difficult, although from the presence of infection or a febrile condition the meat might not be fit for human food. Hence the necessity for examining it while the carcass is intact or in the process of dressing, and also before being killed. Healthy meat is firm, elastic, covered with fat of a good consistency and more or less marbled from its presence when cut across. It cuts well, has a uniform bright red color, and the interstitial connective tissue is rather dry than moist. When newly cut there exudes from it, especially on slight pressure, a highly colored, slightly acid juice, having an agreeable odor; by immersing such meat in boiling water it increases in bulk. Diseased meat may possess some of these properties, yet is always deficient in others. If the peritoneum is intact the presence of tuberculosis, anthrax, peritonitis, etc., may be detected, the condition of the kidneys, lymphatic glands, spinal marrow, veins and other organs may betray the marks of diseases of various kinds.

"What would more particularly have to be looked for in inspecting meat in an abattoir has been stated to be 'inflammation of various organs, cancerous disease, purulent infection, putrid decomposition, suppression of urine, jaundice, dropsy, rot (due to flukes), ovine bronchitis, diarrhoea and dysentery. Wasting diseases and various local diseases, besides these the various contagious diseases may be mentioned. The presence of trichinæ spiralis and the larva of the various tape worms requires more especially to be mentioned, as none but a competent man can undertake to search for and determine their presence.

"It is not my intention to enter into a description of the vari-

ous means of detecting the diseases and parasites mentioned at this time. At a future meeting I may dwell at more length on the subject. Suffice it to say in conclusion that the simple fact that these diseases and parasites exist, and that through ignorance or worse, the flesh of such animals (which, to say the best, is most innutritious) may be disseminated among the people and consumed, is quite sufficient to warrant the authorities of this and every city and town in the Province erecting abattoirs and appointing a properly qualified veterinary inspector to look after the health of the people by preventing the consumption of meat which is manifestly unfit for human food."

CORRESPONDENCE.

CRITICISMS FROM T. KENNEDY, V.S., M.R.C.V.S.L.

152 3D AVENUE, PITTSBURG, Pa., June 30, 1883.

Editor of Veterinary Review:

DEAR SIR—Since my arrival in this country from England, some two months ago, I have read with much pleasure, several numbers of the VETERINARY REVIEW. Under the heading Anthrax in Natal, by Mr. Wiltshire (August and September numbers, 1882), the writer describes a case of it in the horse, and which we call purpura hæmorrhagica. Purpura hæmorrhagica is a sequel to exhaustive diseases, and especially those of the chest, but this disease arises from other causes.

I have seen it come on in this country after a slight attack of pneumonia, when the animal was well nourished and had good ventilation, as well as every other comfort. I would venture to say the case mentioned by Mr. Wiltshire was at first a case of pneumonia, bronchitis, or pleuro-pneumonia, which was neglected by its owner and ran on to purpura hæmorrhagica, as I have failed to notice those symptoms mentioned, save in chest complications.

The discharge from the nostrils, the quick pulse and breathing, with symptoms of colic, all point to chest complication, as very often we get them with attacks of pneumonia, not to speak

of diseases with more pain, such as pleuro-pneumonia. My experience of purpura hæmorrhagica with the abrupt termination of the swellings, petechial spots on the schneiderian membrane, as well as on other membranes, we get a slow, oppressed and double pulse, sometimes of an intermitting character, and only felt in the carotids, whilst the breathing is scarcely disturbed, unless when swellings run on to the throat :

NAVICULAR DISEASE.

BY MR. A. ZUNDEL. (February No.)

Navicular disease, till of late, seemed a mysterious one to the veterinary surgeon.

I am sorry I cannot agree with Mr. Zundel as to the origin of this disease, when he is of the opinion that it is the synovial capsule that is first attacked. Then I should like to know how is it that we have found the cancellated tissue of the navicular bone in its centre diseased, without any external appearance of ulceration on its surface ? For, if the synovial capsule was the first diseased, I should expect the surface of the navicular bone next, and then its cancellated structure.

In my opinion, the cancellated tissue is first attacked, which runs on to ulceration of the surface of the navicular bone, and by the deposits on its surface the synovial capsule and perforans tendon become diseased, and afterwards we have the several adhesions.

Mr. Zundel says the animal is afraid to let his foot to the ground. If this was so, I should expect great pain on pressure at the heel—always a certain amount of fever—but this is not the case.

All horses suffering from navicular disease point the foot, but not resting on the toe, as stated by Mr. Zundel, the heel being on the ground the same time as the toe. In strain of the back tendons, suspensory ligament, or muscle of the shoulder, the animal rests on his toe, but more under the shoulder, and not so much pointed as in navicular disease. In the former cases the limb is much more flexed.

The animal with navicular disease comes out of the stable very stiff and lame, but improves when exercised. This, with other symptoms, is a very important one. The class of horses we find subject to this disease are well bred, with low action, which we call "Daisy Cutters."

TEXAS FEVER.

BY MR. TRUMBOWER, V.S. (June No.)

The above named disease is similar to, if not the disease itself, what we term splenic apoplexy. I was once consulted by a farmer who lost some of his young stock (two years old)—some of which died suddenly from splenic apoplexy, others from black quarter, and others from diarrhæa. Those suffering from the latter form lived for a considerable time, evidently relieving the system in this way.

I examined the field the cattle grazed on, which was in a low-lying district, and of a marshy nature. The grass had a peculiar dark green color, and it struck me at the moment that this land and grass was highly charged with gaseous material, which caused all the mischief. This field was manured each year, and seemed very nutritious; too much so, in my opinion, for young stock.

The land around this particular field was not near so nutritious, and the cattle on it were always healthy. After thinking the matter over, I advised my client not to let any of his cattle on this field till about one o'clock each day, and take them off at sunset. My reasons for doing so were that the gaseous material increased before and after the hours mentioned, and decreased from one o'clock to sunset. I never heard this gentleman say he had a case afterwards.

I should like to have the Texas farmers try this remedy—that is, let the cattle graze on upland pasture at night, and permit them on land with a marshy tendency only by day.

I am, dear Mr. Editor,

Yours respectfully,

T. KENNEDY, V.S., M.R.C.V.S.L.

REVIEW.

LE CHARBON ET LA VACCINATION CHARBONNEUSE, D'APRES LES TRAVAUX RECENTS DE M. PASTEUR. (ANTHRAX AND VACCINATION, FROM THE RECENT DISCOVERIES OF M. PASTEUR.)

By CH. CHAMBERLAND.

This work is a resumé of all that is known upon the question of vaccination against anthrax.

A portion of the book contains the various reports made by M. Pasteur before the Academy of Sciences, each one of which constitutes a discovery by itself. They possess, therefore, not only a scientific, but an historic interest, and prove that the principle of vaccination is well established notwithstanding the occurrence of a few cases of unsatisfactory and partial success in its application.

The numerous experiments and wonderful results are reported in detail, from those of Pouilly-le-fort to those performed in Hungary, in Germany, in Italy, in Belgium, in Switzerland, and in England.

Mr. Chamberland supplements some considerations upon the duration of the immunity acquired which, however, cannot yet be accepted as established, by reason of the shortness of the period since the inoculations were made.

The volume contains over 300 pages of interesting reading matter, and is illustrated with a number of plates representing the appearance of the blood as seen under the microscope, both in health and during various stages of development of the bacteridie.

OBITUARY.

Charles D. House, D.V.S., who had made a deserved reputation for his dexterity in operating on horses' mouths, died lately after a long illness.

On Monday, May 14th, Henry Kingman, a student of Montreal, and assistant to Dr. Williamson Bryden, of Boston, was

drowned while yachting. He was a young man of unusual promise, having secured several of the second year prizes at Montreal.

PERSONAL.

Prof. A. Liantard has been elected Corresponding and Honorary Member of the Société Vétérinaire d'Alsace-Lorraine.

Doctor R. Harrison has been appointed by the President and Fellows of Harvard University instructor in anatomy in the veterinary department of that institution, which is to be opened next fall.

Doctor J. F. Winchester, of Lawrence, has been offered the permanent position of Professor of Veterinary Medicine at Amherst Agricultural College.

Dr. A. Rose has been appointed quarantine inspector by the Treasury Cattle Commission, and his brother, W. Rose, D.V.S., is assistant to Dr. Salimon, the veterinarian attached to the Department of Agriculture at Washington.

NEWS AND SUNDRIES.

HYDROPHOBIA AMONG CATTLE.—Several cases of hydrophobia are reported among cattle in Mississippi.

HYDROPHOBIA.—Authentic reports come to us of the existence of hydrophobia among dogs in different States.

SNAKE STORY.—A sick horse at Davenport, Iowa, was given medicine that caused a green water-snake six inches long to come out of the horse's stomach.—*Prairie Farmer*.

PINK-EYE.—"Pink-Eye" prevails among the draft horses of Aberdeen, Scotland. The disease has had its run in Glasgow, Newcastle, and other towns of the kingdom.

GOOD COW.—R. P. Young, of Oregon county, Mo., has a cow that has never been the mother of a calf, and yet she gives two-

and-a-half gallons of milk per day. The cow is four years old.—*Journal of Agriculture.*

TRICHINOSIS FROM EATING HORSE-FLESH.—Several Austrian journals report the case of a woman who suffered from trichinosis, caused, it is claimed, by eating horse flesh. The subject is being investigated.—*Medical Record.*

COMMISSION ON DISEASES.—The commission appointed to investigate epidemic diseases among cattle report that there are 33,306,355 cattle in this country, valued at \$659,000,000. Of this number about 10 per cent. perish every year of epidemic diseases.—*Ohio Farmer.*

ALMOST A DOUBLE PIG.—George Hallock, of Calverton, L. I., has a curiosity in the shape of a pig with seven feet. The animal has a head like an ordinary pig, but two bodies joined at the shoulders, with two fore-legs in the natural way and one sticking up from his back, and four hind-feet in good shape and two tails.—*Tribune and Farmer.*

A WONDERFUL COW.—The Jersey cow "Oakland's Cora," owned by Valanery E. Fuller, of Hamilton, Ontario, has furnished the following amount of milk, cream and butter in thirty-one days: Total weight of milk, 725 lbs., 8 oz.; total weight of cream, 216 lbs.; total weight of butter (unsalted), 81 lbs., 5½ oz.

GERMAN BOARD OF HEALTH.—Among the members composing the Bureau of Hygiene for the German Empire, the veterinary profession counts: Dr. Schutz, of the Berlin Veterinary School; Dr. Siedamgrotzky, of the Dresden Veterinary School, and Herr Lydtin, Veterinary Surgeon in Chief to the Grand Duchy of Baden.

VETERINARY LEGISLATION.—Under the law passed at the last session of the Legislature of Illinois, the State Veterinarian is authorized, when he finds a case of glanders, to have three appraisers estimate the value of the animal, and also of any property he may consider it necessary to destroy. The appraisers' estimate is certified to by a justice of the peace, and forwarded to

the Governor for payment. Any one disposing of an animal known to be glandered is liable to a fine of not less than \$50, or more than \$500, and any one who, having a glandered animal, fails to notify the State Veterinarian, is liable to the same fine.—*National Live Stock Journal*.

QUARANTINE NOTES.—Under instructions from Secretary Folger, Collector Robertson permitted 120 imported Holstein cattle from Holland to proceed to Syracuse, N. Y., without being detained in the government cattle quarantine at Garfield, N. J. This may be all right and is, of course, exceedingly satisfactory to the importers, but it is a precedent that may not prove satisfactory to the Department in the future, and will be likely to cause complaint from less favored importers. The grounds upon which this permission was granted have not yet appeared in print, that we have seen, but will probably be given to the public.—*Prairie Farmer*.

BREEDING LAWS.—A law has recently been established in Texas, which provides that no stallion will be allowed to cover mares without a certificate to the effect that he is clear of certain diseases. This certificate has to be renewed every year, and when the law is not complied with a heavy penalty is imposed on the owner of the stallion, the man in charge, or the man whose mare is served. Such a law in this or any other country would have the good effect of ridding the horse stock of some of the hereditary disease that is peddled around by diseased stallions.—*Texas Farm and Ranch*.

VETERINARY JURISPRUDENCE.—Some time ago Mr. I. M. Sweet entered suit in the United States Court, at Milwaukee, against A. E. Perkins, Esq., to recover damages sustained among his sheep by foot-rot. The prosecution claimed that his sheep were injured to the extent of \$5,000 by the disease, which was communicated to them by sheep purchased from Perkins. The defense claimed that foot-rot was not a contagious disease, and quoted authorities that it was primarily caused by sheep standing continuously in wet ground, the gland between the points of the hoof becoming diseased and the foot beginning to rot at once.

The case was submitted to the court, and a decision in favor of the defendant was rendered.—*Prairie Farmer*.

A FAST YOUNG MARE.—Byram Moulton, of Alexander, N. Y., sends the following to one of the local papers: "Three years ago I bred two mares to Van de Bogart's Blue Danube, by Woodford Mambrino, dam Cracovienne by Alexander's Abdallah. One of them, by Harry Clay, foaled a fine horse colt (Blue Clay) some time in June. The other, a Royal George mare, dropped a filly (Blue Georgie) August 6, 1881. The filly was rather small, and ran with its dam all winter. Sometime during the following spring, by an unforeseen accident, these colts got together; but as soon as discovered they were separated, and, as the filly was but a little over ten months old, I did not anticipate any trouble. On June 2, 1883, this filly foaled a fine, intelligent horse colt, above the medium size, with good limbs and action. This is something unheard of in this section, and under the circumstance I think Blue Georgie ought to be considered a very fast young mare."

ANOTHER OUTBREAK OF PLEURO-PNEUMONIA.—Staten Island has of late years been plagued with contagious pleuro-pneumonia among cattle, and several weeks ago there occurred another outbreak of the disease, which is spreading rapidly, to the alarm of the cattle owners on the island. One farmer has already lost nine head of stock, another five, another three, while two others have each lost a valuable pure-bred Jersey. Efforts are being made to combat the disease, but little can be done in view of the fact that the last State Legislature sapiently repealed the law relating to the isolation of infected cattle and the suppression of the plague. The State Board of Health having been appealed to, says that as bovine pleuro-pneumonia is not known to endanger human life, it is powerless to restrict the movement of infected cattle or take any steps to stamp out the malady. Application has also been made to A. M. Farrington, Superintendent of the United States Cattle Quarantine Grounds at Garfield, Bergen County, N. J., but he replies that he knows of no United States law authorizing interference in the matter. What can the Treasury Cattle Commission do or advise in this connection? It

is very evident that the repeal of the State law bearing on the subject was premature and ill-advised. The helpless condition of those likely to suffer from the diseases shows strongly the necessity of appropriate repressive legislation at the earliest opportunity.—*Rural New Yorker*.

HYDROPHOBIA.—For some time M. Pasteur, the French investigator, has been experimenting with a view of discovering whether the fatal infection of rabies can be disarmed of its power by inoculation. It is said that he now possesses four dogs which are proof against the infection, whatever may be the method of inoculation used or the virulence of the matter, while other dogs inoculated with the same virus invariably perish. The experimenter raises the question whether these four animals owe their impunity to spontaneous recovery from a mild attack which may have escaped observation, or whether they are naturally refractory to the disease. One of three dogs which he inoculated in 1881 survived, and though twice inoculated in 1882, he did not become rabid. The importance of finding a remedy for all forms of hydrophobia is magnified by two facts brought to light by the researches of M. Bert. One of these is that even if the saliva of a mad dog does not communicate rabies it may prove fatal by producing serious local injuries—in other words, the secretions of rabid animals have poisonous properties over and above the special rabie virus. The second fact is that it does not follow because a dog which has bitten any person does not die that the animal is free from rabies. These conclusions will add to the terrors of the disease. But there is some consolation in learning from M. Bert that the mere saliva of rabid dogs do not always communicate the deadly virus, and apparently never communicate it unless they contain the mucus from the respiratory organs, which seems to be the fatal portion of the saliva.—*Proceedings of Medical Society of County of Kings*.

RESEARCH IN SANITARY SCIENCE.—Subject to the conditions of their scheme, the Grocers' Company now announce as the matter of competition for their first Quadrennial Discovery Prize of £1,000 for original research in sanitary science the following

problem:—"To discover a method by which the vaccine contagium may be cultivated apart from the animal body, in some medium or media not otherwise zymotic, the method to be such that the contagium may by means of it be multiplied to an indefinite extent in successive generations, and that the product after any number of such generations shall (so far as can within the time be tested) prove itself of identical potency with standard vaccine lymph." The prize is open to universal competition, British and foreign. Competitors for the prize must submit their respective treatises on or before the 31st of December, 1886, and the award will be made as soon afterwards as the circumstances of the competition shall permit, not later than the month of May, 1887. In relation to the discovery prize, as in relation to other parts of the Company's scheme in aid of sanitary science, the Court acts with the advice of a scientific committee, which at present consists of the following members:—John Simons, C.B., F.R.S., John Tyndall, F.R.S., John Burdon Sanderson, M.D., F.R.S., and George Buchanan, M.D., F.R.S. All communications on the subject are to be addressed to the clerk of the Grocers' Company, Grocers' Hall, London, E.C. The Grocers' Company have issued a circular giving the conditions of the candidature and award.—*Veterinary Journal* (London).

AN ARRAIGNMENT OF AMERICAN VETERINARY SURGEONS.—A person who called himself a veterinary surgeon read a paper recently before the New York Farmers' Club, in the Cooper Institute, on the diseases of cattle and their treatment by veterinary doctors, whose methods he condemned. There were, he said, on the farms of the United States in June, 1882, 10,357,981 horses, valued at \$1,035,798,100; 1,812,932 mules, valued at \$181,293,200; 993,970 oxen, valued at \$49,698,500; 12,443,593 milch cows, valued at \$321,089,725; 22,488,590 other cattle, valued at \$562,214,750; 35,191,156 sheep, valued at \$527,867,340, and 47,683,951 swine, worth \$476,839,510, making a grand total of the value of dumb animals on farms in the country, \$3,154,821,125. This estimate, however, the lecturer considered by far too low, and he felt certain that the value of dumb animals in the

United States was about seven billions of dollars, judging from the fact that some animals are held at \$50,000, as in the case of Damascus, just sent by John W. Garrett, of Baltimore, to the King of Italy. It is a disgrace to the nation, the orator continued, that there is not one legally chartered, organized, and established veterinary college in the country. Veterinary science here lies deep down in the ditch of ignorance, and the billions of dollars invested in animal property, as well as the animals themselves, are left to the mercies and wantonness of chance. The country is flooded with bogus diploma mills, several of which are in this city and other parts of this State. The speaker went on in the above strain, but failed to mention where the New York diploma mills are. It is understood that parties in this city do practically sell veterinary diplomas, and it is to be regretted that some definite facts were not given.—*Medical Record*.

EXCHANGES, ETC., RECEIVED.

FOREIGN.—Revue für Thierheilkunde und Thierzucht, Repertorium der Thierheilkunde, Recueil de Médecine Vétérinaire, Archives Vétérinaires, Journal de Zootechnie, Gazette Médicale, Presse Vétérinaire, Veterinary Journal, Veterinarian, Clinica Veterinaria, Journal de Dosimétrique Médecine.

HOME.—Medical Record, Medical Gazette, The Planet, Druggists' Circular, U. S. Veterinary Journal, Turf, Field and Farm, American Agriculturist, Spirit of the Times, National Live Stock Journal, Western Medical Reporter, Breeders' Gazette, American Cultivator, Prairie Farmer.

JOURNALS.—Farmers' Review, Tribune Farmer, Home Farm, Farm Journal, National Tribune, Iowa Farmer.

PAMPHLET.—Eighth Report of the Ontario Agricultural College.

COMMUNICATIONS.—C. C. McLean, W. H. Pendry, V. L. James, W. D. Critcherson, N. H. Paaren, A. A. Holcombe, J. C. Myers.

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